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# JOURNAL OF MYCOLOGY.

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## NEW FLORIDA FUNGI.

BY J. B. ELLIS AND DR. GEO. MARTIN.

The species here described were mostly collected by Dr. Martin at Green Cove Springs, Florida, in the winter of 1885.

*PATELLARIA CYANEA*, E. & M.—On living leaves of *Quercus (laurifolia?)* February. Gregarious or scattered, hypophyllous. Excipulum patelliform, sessile, orbicular, 275  $\mu$  in diameter, convex and obscurely marginate, becoming concave, nearly indigo-blue and surrounded by a scanty mycelium which stains the leaf blue. Asci oblong-cylindrical, contracted at the base, 8-spored, 27—30  $\times$  6  $\mu$ , without paraphyses. Sporidia biseriate, obovate, 1-septate, hyaline, 7—9  $\times$  3  $\mu$ .

Has the general aspect of *Asterina subcyanea*, E. & M., also much resembles *Patellaria nigro-cyanea*, Phill. & Hark., outwardly, but that species has asci 75  $\times$  15  $\mu$  and sporidia 14—16  $\times$  3—4  $\mu$ .

*ASCOMYCETELLA AURANTIACA*, E. & M.—On leaves of *Quercus laurifolia*, March. Dull orange-yellow, hypophyllous, flat, scattered, 380—400  $\mu$  diameter. Asci obovate or pyriform, contracted below into a short stipe, 25—38  $\times$  12—15  $\mu$ . Sporidia crowded, obovate, 1-septate, constricted at the septum, granular at first, becoming clear and hyaline, 12—15  $\times$  4—6  $\mu$ . Paraphyses none. Conidia abundant, forming a small, loose, white tufts scattered over the lower surface of the leaf and consisting of closely packed bundles of hyphæ 100—150  $\times$  12—15  $\mu$ , bearing lateral and terminal, hyaline, oblong-elliptical, 5—7  $\times$  2—3  $\mu$  conidia. The bundles of hyphæ are hyaline and cylindrical, and separate at intervals of 12—20  $\mu$  into sections squarely truncate at each end. Apparently the growth is proliferous; the little bundles of hyphæ, after reaching the height indicated and bearing at their apices a crop of conidia, continue their united growth for 12—20  $\mu$  further, where they bear another crop of conidia; and this process is repeated several times, a joint or articula-

tion being formed at each resting point which is also marked by a ring of conidia surrounding the bundle of hyphæ at these points. This differs from *A. sulfurea*, Winter, of which we have a specimen, in its smaller septate sporidia and the presence of conidia. The sporidia of *A. aurantiaca* seem to be mature, and we do not think they ever become 3-septate as in *A. sulfurea*.

In Grevillea, vol. 4, p. 156, we find the following brief diagnosis of *Capnodium pelliculosum*, B. & Rav.: "Threads of the mycelium erect, trifid at the apex, after the fashion of a *Tripasporium*, shorter than the oblong, constricted perithecia." Specimens of this production have been distributed in De Thumen's Mycotheca, 2059, and in Rav. F. Am., no. 79, on living leaves of *Prunus Chicasa*, from South Carolina, but in our copies of both these exsiccati the specimens are without perithecia and show no trace of "threads trifid at the apex." Specimens, however, collected by Dr. Martin, at Green Cove Springs, Florida, on leaves of *Magnolia glauca*, in February and March, 1883, show both the pycnidial and ascigerous perithecia and the *Tripasporium*-like tips of the threads of the mycelium. As this latter character is a striking one, and as our specimens on *Magnolia* agree well enough in other respects with the diagnosis above quoted and with the specimens in the exsiccati referred to, we consider it tolerably certain that they represent the mature state of the species in question, and have written out a detailed description as follows:

CAPNODIUM PELLICULOSUM, B. & Rav.—On leaves of *Magnolia glauca*, February. Mycelium epiphyllous, forming a thin, sooty-colored layer on the surface of the leaf and consisting of closely septate, brown, subrectangularly branched and interwoven threads, 5—8  $\mu$  thick, with each cell or joint nucleate and bearing when well developed, stellately 3—4-parted conidia, much like those of *Tripasporium*, nearly hyaline at first, becoming brown, each arm 4—5 septate and nucleate, 7—9  $\mu$  thick at the base and 50—75  $\mu$  long, tapering to an obtuse point at the apex. Pycnidial perithecia growing like thick branches from the sides of the prostrate threads, membranaceous, of rather coarse cellular structure, oblong or flask-shaped, 75—200  $\times$  30—50  $\mu$ , apex subobtuse and subfimbriate, discharging countless, minute, hyaline, oblong spores, 3—4  $\times$  1  $\mu$ . Sometimes these perithecia are quite globose and formed by the enlargement of one of the component cells of a thread or hypha. There are also produced from the mycelium cylindrical, brown, multiseptate conidia, 70—80  $\times$  6—7  $\mu$ , like the conidia of *Helminthosporium*. Ascigerous perithecia seated on the mycelium, depressed-globose, membranaceous, 100—150  $\mu$  diameter, with brown, septate appendages like those of an *Erysiphe* 15—25 in number, 75—100  $\mu$  long. Asci at first oblong, becoming ellipsoidal and about 40—25  $\mu$ . Sporidia crowded, broad-fusiform, hyaline, 1-septate at first, becoming 3-septate at maturity, and 15—22  $\times$  4—7  $\mu$ .

ASTERINA STOMATOPHORA, E. & M.—On living leaves of *Quercus laurifolia*, February and March. Perithecia lenticular, scattered, small,

170—185  $\mu$  diameter, with a thin, reticulated margin and indistinctly perforated in the center, texture cellular. Asci 30—35 x 6—8  $\mu$ , oblong and rather broader below and abruptly contracted into a short, stipitate base. Paraphyses none. Sporidia biseriate, oblong, 1-septate, rather narrower and more acute at the lower end, 7—12 x  $2\frac{1}{2}$ —3  $\mu$ , hyaline. When a perithecium is removed from the leaf, a piece of the epidermis often adheres to its lower surface so that under the microscope the stomata are visible through the thin edge of the perithecium, appearing as if they actually formed a part of it. It is to be noted that in this and most of the other species with flattened perithecia, the wall of the perithecium is nearly obsolete below, so that the perithecium is in fact hardly more than a shield-like disk covering the asci.

*SPHÆRELLA INCISA*, E. & M.—On dead petioles of *Sabal serrulata*. Perithecia membranaceous, gregarious, globose or depressed-globose,  $\frac{1}{4}$  mm., covered by the blackened epidermis. Asci lanceolate, 100—120 x 8—10  $\mu$ , without paraphyses. Sporidia fusiform, attenuated to a bristle-like point at each end, endochrome distinctly divided in the middle, pale yellowish; length, including the bristle-pointed ends, 40—50  $\mu$ , width 3—4  $\mu$ . The walls of the perithecia are closely adnate to the matrix, and with difficulty separable from it.

*OPHIOLUS VERSISPORUS*, E. & M.—On dead petioles of *Sabal serrulata*. Perithecia scattered or gregarious, covered by the cuticle, lenticular,  $\frac{1}{4}$ —1.3 mm., covered by the blackened epidermis which is whitened just around the short, obtuse, barely erumpent ostium. Asci 70—80 x 8—9  $\mu$ . Paraphyses? Sporidia filiform, curved, multinucleate at first but at length of a uniform pale yellow color without nuclei or septa, 60—70 x 2— $2\frac{1}{2}$   $\mu$ .

*Melanconium Sabal*, Cke. is usually associated with this.

*DIDYMOSPHÆRIA SERRULATA*, E. & M.—On bleached spots on dead petioles of *Sabal serrulata*. Perithecia as in the preceding species. Asci 100—112 x 10—12  $\mu$ , cylindrical with abundant linear paraphyses. Sporidia 1-seriate, hyaline at first and 3-4 nucleate, soon becoming dark brown and 1-septate, 18—20 x 5—6  $\mu$ , surrounded with a hyaline envelope at first. The Sporidia are much like those of *Anthostomella leucobasis*, E. & M., only longer and 1-septate, and the perithecia are larger and more prominent.

*SPHÆRIA (ANTHOSTOMELLA) LEUCOBASIS*, E. & M., and *SPHÆRIA SABALENSIOIDES*, E. & M., in Am. Nat., Oct. 1882.—The general appearance of these two species is much the same, but the latter is scattered between the dark blotches on which the former occurs, and the substance of the matrix is not whitened beneath. The sporidia also are uniformly narrower, 4—5  $\mu$ , and have a slight apiculus at the lower end (sometimes at both ends) separated from the body of the sporidium by a slight division of the endochrome but finally absorbed; they are also subhyaline with a yellowish tint in all the specimens examined, though it is not

improbable that they may finally become brown. This species occur on some of the specimens with no. 1199, N. A. F.

It is not improbable that *Sphæria sabalicola*, E. & M., l. c., is the same as the *S. sabaligera*, B. & C., though the sporidia are only about half the length given for that species.

**HETEROSPORIUM ALLII**, E. & M.—On withered leaves of *Allium vineale*, Newfield, N. J., Aug. 1883. Hyphæ erect, subcontinuous, nodulose, olive-brown, about  $50 \times 9$   $\mu$ . Conidia oblong, fuscous, minutely echinulate, 1—3-septate,  $20\text{--}33 \times 9$   $\mu$ . Differs from *H. Ornithogali* in its olivaceous color and smaller conidia.

**SEPTORIA PYROLÆ**, E. & M.—On living leaves of *Pyrola secunda*, Red Rock, Lake Superior, June, Prof. J. Macoun, no. 20. Appears at first in the form of little yellowish-white pustules scattered over the lower surface of the leaf but visible also above. Soon the little nerve-bounded areas of the leaf, in which these pustules appear, turn brown bordered by the limiting nervelets now turned black, and in place of the yellowish-white pustules appear little black perithecia, opening below and filled with filiform,  $25\text{--}35 \times \frac{3}{4}$   $\mu$  spores, obtuse at each end and only slightly curved.

**SEPTORIA CONSIMILIS**, E. & M.—On cultivated lettuce, Geneva, N. Y., July (Arthur), Newfield, N. J. On brown, dead, rather indefinitely limited spots,  $\frac{1}{2}$ —1 cm. in diameter. Perithecia, brown, subglobose, innate, amphigenous,  $90\text{--}100$   $\mu$ , scattered over the spots and visible on both sides of the leaf. Spores filiform, multinucleate, slightly curved, ends mostly obtuse,  $30\text{--}45 \times 2\text{--}2\frac{1}{2}$   $\mu$ , hyaline. Differs from *S. Lactucæ*, Pass, in growing chiefly on spots, perithecia also a little larger and spores a little longer but not distinguishable by its spores alone.

**PHYLLOSTICTA GORDONIÆ**, E. & M.—On living leaves of *G. lasianthus*, March. Spots dark brown, dry, occupying the ends and sides of the leaves. Perithecia brown-black, subglobose, innate, slightly erumpent, amphigenous,  $120\text{--}140$   $\mu$ . Spores hyaline, oblong, nucleate,  $12 \times 3$   $\mu$ .

**PHYLLOSTICTA PERSEÆ**, E. & M.—On living leaves of *Persea Carolinensis*, March. Spots brownish-gray, covering the ends and sides of the leaves,  $150\text{--}300$   $\mu$  long,  $60\text{--}80$   $\mu$  broad. Spores oblong, hyaline, nucleate,  $3\text{--}8 \times 1\text{--}3$   $\mu$ . This and the preceding species with *P. terminalis* E. & M., and *P. Myricæ*, Cke., were collected in the same locality, and, from the similarity in their mode of growth and the not very striking difference in their other characters, they might be considered as varieties of the same thing; this, however, is a question that can not be definitely determined without knowing the ascigerous forms to which they all probably belong.

**PESTALOTZIA PEREGRINA**, E. & M.—On dead leaves of *Prunus Austriaca*, still hanging on branches cut off last year, Newfield, N. J., May 1885. Acervuli hystericiform, covered at first, then partially erumpent.

Spores oblong-elliptical or obovate, 4-septate with a short, narrower, subconical, hyaline cell at each end, intermediate cells brown. Crest of 3 hyaline, spreading bristles about 7—10  $\mu$  long. Basidia about as long as the spore, slender. Colored part of the spore 12—16  $\times$  6—7  $\mu$ . Differs from *P. funera*, in its constantly smaller spores.

ASTERINA DISCOIDEA, E. & M., in Am. Nat. This occurs also on leaves of *Olea Americana*, not differing specially from the form described on leaves of *Quercus laurifolia*. It may be that this is the *A. oleina*, Cke., Grev. XI, p. 38. The description there given is not inconsistent with this supposition. In that case, *A. discoidea*, E. & M., is a synonym of *A. oleina*, Cke. Unfortunately, the specimen of this latter series in Rav F. Am., no. 757, in our copy, does not show even a perithecium.

MICROSPHÆRA DENSISSIMA, Schw.—What appears to be this species was found on leaves of *Quercus laurifolia*, at Green Cove Springs, in January and February, 1885. Mycelium thick, gray, persistent, confined to definite spots on the lower surface of the leaf, 8—10 mm. in diameter. Perithecia black, globose, then depressed, 120  $\mu$ . Appendages stout, continuous and subhyaline, twice dichotomous, ultimate divisions curved 96—120  $\times$  7  $\mu$ . Asci 6. Sporidia 6—8, oval, granular and nucleate, 21—25  $\times$  12  $\mu$ . The branched tips of the appendages are often of a pyramidal shape, the main axis running through and bearing a second set of branches shorter than the first.

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## NEW NORTH AMERICAN FUNGI.

BY DR. G. WINTER, LEIPZIG, GERMANY.

SPHÆRELLA EARLIANA, Winter.—Perithecia amphigena, densissime stipata, greges parvos, angulato-rotundatos, ca. 1—2 mm. latos, nigros formantia, minutissima, globosa, poro simplici pertusa, atra, 60—70  $\mu$  diameter. Asci fasciculati, e basi subventricosa sursum parum attenuati, brevissime stipitati, 8—spori, 26—30  $\mu$  longi, 7  $\mu$  crassi. Sporæ inordinatæ, clavatæ, medio uniseptatæ, non constrictæ, hyalinæ, 8  $\nu$  longæ, 2  $\mu$  crassæ. Paraphyses desunt.

On cultivated strawberries, Anna, Ills., May 2d, 1882, Leg. F. S. Earle. Differs from *Sphærella Fragariæ* (Tul.) especially in its small asci and sporidia.

FUSICLADIUM EFFUSUM, Winter.—Cæspites hypophylli, plerumque minuti, rotundati, rarius effusi, confluentes, sine macula, fumosi. Hyphæ erectæ, simplices vel parum ramosæ, septatæ, guttulatæque, valde torulosæ, fuscæ, apicem versus dilutiores, 100—140 longæ  $\times$  4  $\mu$  crassæ. Sporæ oblongo-fusoideæ, fere rhomboideæ, continuæ vel uniseptatæ, dilutissime fuscæ, utrinque subtruncatæ, 17—24  $\mu$  longæ, 5½—7  $\mu$  crassæ. On leaves of *Carya alba*, Cobden, Ill., October 1st. 1882. Leg. F. S. Earle.